

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): An apparatus for stripping hydrocarbons from fluidized solid particles counter-currently with a gaseous stripping fluid, said apparatus being part of a separator vessel and comprising:

- a) an approximately vertical stripping chamber;
- b) several pairs of segmented, parallel baffles arranged in rows;
- c) a fluid-distributing device for feeding a gaseous stripping fluid; and
- d) a grid to collect refractory and coke debris,

said stripping chamber comprising a zone of downward circulation of the suspended particles counter-currently to said fluid, with the pairs of segmented baffles being oriented so that such rows are offset relative to rows of other levels, where the thickness and separation of said sets of baffles is so dimensioned as to reduce coalescence of the formed bubbles and optimize the hydrocarbons desorption from said fluidized solid particles,

wherein said several pairs of segmented, parallel baffles arranged in rows comprise a first pair of baffles each having a first geometry followed by a second pair of baffles each having a second geometry, and wherein said first geometry and said second geometry are not the same.

2. (previously presented): An apparatus according to claim 1, further comprising a pipe-grid for feeding a gaseous pre-stripping fluid located in the upper part of the stripper apparatus.

3. (original): An apparatus according to claim 1, wherein the fluid-distributing device is a steam-ring.

4. (original): An apparatus according to claim 1, wherein the fluid-distributing device is a pipe-grid.

5. (previously presented): An apparatus according to claim 3, wherein the fluid distributed by said device is steam.

6. (previously presented): An apparatus according to claim 1, wherein said vertical stripping chamber comprises a set of a series of at least two segmented, baffle plates arranged in sequence.

7. (previously presented): An apparatus according to claim 1, wherein said vertical stripping chamber comprises a set of a series of three segmented, baffle plates arranged in sequence.

8. (original): An apparatus according to claim 1, wherein impinging pairs of baffles are oriented so as to be set off relative to the next row of baffles, allowing the gaseous flow to meet an impinging surface able to reduce coalescence of the stripping fluid bubbles.

9. (previously presented): An apparatus according to claim 1, wherein the sets of segmented baffles include from four to fifteen sets of parallel baffles.

10. (original): An apparatus according to claim 1, wherein the segmented sets of baffles comprise conventional baffles.

11. (original): An apparatus according to claim 1, wherein the segmented sets of baffles comprise baffles of the disc and donut type.

12. (original): An apparatus according to claim 1, wherein the segmented sets of baffles comprise baffles of any geometry.

13. (previously presented): An apparatus according to claim 11, wherein any upper disc is supported by the next lower disc, said next lower disc being in turn supported by an upper donut, and successively.

14. (previously presented): An apparatus according to claim 11, wherein first pairs of discs and donuts are refracted.

15. (previously presented): An apparatus according to claim 1, wherein the baffles are arranged such that a cross-sectional free area of said stripping chamber is from 20% to 80% of a total cross-sectional area of said stripping chamber, and wherein ribs of the baffles represent from 5% to 20% of the total cross-sectional area.

16. (previously presented): An apparatus according to claim 15, wherein the ribs represent from 8% to 12% of the total cross-sectional area.

17. (previously presented): An apparatus according to claim 1, wherein rib width in the first baffle of the at least two baffles of each set is from 0.012Φ to 0.18Φ , and wherein Φ represents the stripping chamber diameter.

18. (previously presented): An apparatus according to claim 17, wherein the rib width in the first baffle of the at least two baffles of each set is from 0.018Φ to 0.12Φ .

19. (previously presented): An apparatus according to claim 1, wherein rib width of the second baffle of the at least two baffles of each set is from 0.024Φ to 1.62Φ , and wherein Φ represents the stripping chamber diameter.

20. (previously presented): An apparatus according to claim 19, wherein the rib width of the second baffle of the at least two baffles of each set is from 0.074Φ to 0.36Φ .

21. (original): An apparatus according to claim 1, wherein the baffles are parallel to the horizontal.

22. (original): An apparatus according to claim 1, wherein the baffles are slant baffles, with a slope to the horizontal of from 20° to 40° .

23. (previously presented): An apparatus according to claim 1, wherein the angle between the chamber walls and an impinging baffle/donut is from 30° to 60° .

24. (original): An apparatus according to claim 23, wherein the angle between the chamber walls and the impinging baffle/donut is 45° .

25. (previously presented): An apparatus according to claim 1, wherein a set of segmented baffles containing from 2 to 6 baffles, is alternated with a set of at least two segmented discs.

26. (previously presented): An apparatus according to claim 1, wherein said baffles are separated by a distance of from 0.012Φ to 0.54Φ , and wherein Φ represents the stripping chamber diameter.

27. (previously presented): An apparatus according to claim 26, wherein said distance is from 0.036Φ to 0.12Φ .

28. (previously presented): An apparatus according to claim 1, wherein the segmented sets of baffles comprise a set of a series of at least two segmented baffles of the disc type, wherein rips of the first disc of the at least two discs of the set are from 0.003Φ to 0.080Φ , and wherein Φ represents the stripping chamber diameter.

29. (previously presented): An apparatus according to claim 28, wherein the rips of the first of the at least two discs of the set are from 0.008Φ to 0.032Φ .

30. (previously presented): An apparatus according to claim 1, wherein the segmented sets of baffles comprise a set of a series of at least two segmented baffles of the disc type, wherein rips of the second disc of the at least two discs of the set are from 0.006Φ to 0.72Φ , and wherein Φ represents the stripping chamber diameter.

31. (previously presented): An apparatus according to claim 30, wherein the rips of the second of the at least two discs are from 0.008Φ to 0.096Φ .

32. (previously presented): An apparatus according to claim 1, wherein the segmented sets of baffles comprise baffles of the disc type, wherein the distance between discs is from 0.003Φ to 0.24Φ , and wherein Φ represents the stripping chamber diameter.

33. (previously presented): An apparatus according to claim 32, wherein the distance between discs is from 0.008Φ to 0.24Φ .

34. (previously presented): An apparatus according to claim 33, wherein the distance between discs is from 0.008Φ to 0.032Φ .

35. (previously presented): An apparatus according to claim 1, wherein said apparatus is directed to a gas-solid separation process.

36. (original): An apparatus according to claim 35, wherein the gas-solid separation process is part of a fluid catalytic cracking process.

37. (currently amended): A process for stripping hydrocarbons from fluidized solid particles in a stripping zone associated with a fluid catalytic cracking reactor wherein said stripping zone removes hydrocarbons from a continuously circulating stream of fluidized particulate catalyst by contact with a stripping gas, said process comprising:

- a) contacting a particulate catalyst with hydrocarbons;
- b) disengaging hydrocarbon vapors from said catalyst particles to yield catalyst particles having adsorbed hydrocarbons thereon;
- c) passing said catalyst particles having adsorbed hydrocarbons downwardly through a vertical stripping chamber past a series of sets of at least two parallel, segmented, baffle plates each, with the segments being oriented so that the rows are offset relative to rows of the next level, where the thickness and separation of said sets of baffles is so dimensioned as to reduce coalescence of the formed bubbles and optimize hydrocarbons desorption from the catalyst, by virtue of the parallel segmentation the catalyst flowing homogeneously vertically as well as horizontally so as to prevent stagnation zones;
- d) withdrawing stripped catalyst particles from the bottom of said stripping zone;
- e) distributing stripping fluid along the stripper apparatus comprising said segmented sets of baffles while reducing coalescence of bubbles; and
- f) withdrawing stripping fluid and recovered hydrocarbons from the top of said stripping zone,

wherein said series of sets of at least two parallel, segmented, baffle plates each comprises a first set of baffles each having a first geometry followed by a second set of baffles each having a second geometry, and wherein said first geometry and said second geometry are not the same.

38. (original): A process according to claim 37, wherein the particulate catalyst is any porous solid catalyst.

39. (original): A process according to claim 37, wherein the particulate catalyst is a zeolite-containing FCC catalyst.

40. (previously presented): An apparatus according to claim 4, wherein the fluid distributed by said device is steam.